European Law Open (2026), **5**, 560–579
doi:10.1017/elo.2025.10043

DIALOGUE AND DEBATE: SYMPOSIUM ON THE (RE-)TURN TO ACTIVIST GOVERNMENT IN THE EUROPEAN UNION

ECB monetary policy in a quandary

Costas Lapavitsas and Matteo Giordano

Department of Economics, SOAS, London, UK
Corresponding author: Costas Lapavitsas; cl5@soas.ac.uk

(Received 9 June 2025; revised 9 September 2025; accepted 7 October 2025; first published online 31 March 2026)

Abstract
The balance sheet of the ECB expanded greatly after the Great Crisis of 2007-9, similarly to other core central banks, but this development does not signify the adoption of a new 'interventionist' stance. The expansion of the balance sheet by core central banks reflects a profound change in the framework of monetary policy responding to pressures generated during and after the Crisis. In the case of the ECB, however, the expansion also resulted from attempting to cover the cracks of the fragmented European money market to protect the euro. This fragmentation persists and concern about the euro continues to shape ECB policy. The resurgence of inflation since 2022 led the ECB to contract its balance sheet, again similarly to other central banks, making a new framework necessary for monetary policy. But it is not clear what that would be, given the fragmented European money market. The monetary policy of the ECB is in a quandary reflecting the structural deficiencies of the Eurozone.

Keywords: European Central Bank; money market; quantitative tightening; monetary policy; repo market

1. Transformation and interventionism of the ECB

In the period since the Great Crisis of 2007–9 the balance sheet of the European Central Bank (ECB) grew enormously, and its composition was transformed.[1] Balance sheet growth originated in the refinancing of loans to commercial banks and the acquisition of public and private securities, funded by issuing fiat money, that is, banknotes and commercial bank reserve deposits. In 2022, the balance sheet began to contract gradually as refinancing loans were reduced, and reserve deposits began to shrink. Expansion went together with an unprecedented fall in the rates of interest charged and paid by the ECB, often close to zero for several years, while contraction corresponded to a rapid escalation of interest rates.

This performance by the central bank of the European Economic and Monetary Union (EMU) would not have been contemplated by its founding fathers, and nor could it be easily surmised from its statutes.[2] Judging by the trajectory of balance sheets alone, in 2024 the ECB resembled the Federal Reserve System far more closely than in 2007. The problems it faced as it attempted to contract its balance sheet after 2022 were also reminiscent of those of the Fed and other central

[1]More accurately, the balance sheet of the Eurosystem, that is, of the network of National Central Banks with the ECB at its centre. We will use 'ECB' as an envelope term to capture both the Eurosystem and the ECB in the rest of this article unless there is clear reason to refer to them separately.

[2]As is apparent from the debates on the *Gauweiler* and *Weiss* judgements of the European Court of Justice; see, for instance, AM Mooij, 'The Weiss judgment: The Court's further clarification of the ECB's legal framework: Case C-493/17 *Weiss and others* EU:C:2018:1000' 26 (2019) Maastricht Journal of European and Comparative Law 449.

© The Author(s), 2026. Published by Cambridge University Press. This is an Open Access article, distributed under the terms of the Creative Commons Attribution licence (https://creativecommons.org/licenses/by/4.0/), which permits unrestricted re-use, distribution and reproduction, provided the original article is properly cited.

banks. But the ECB remained peculiarly distinct from other central banks, and this is a point of importance in analysing its conduct.

It is well known that the ECB is an unusual central bank since it is a transnational entity that is not backed by an overarching state with a single fiscal policy.[3] Its decision-making structures are constantly pulled in different directions as the transnational concerns of the EMU do not necessarily match – and might even contradict – the national concerns of Member States.

However, the problems of governance also reflect a deeper difficulty faced by the central bank of the EMU compared to other central banks. Namely, the transnational aspect of the monetary union implies that the money market of the EMU is inherently fragmented. This fragmentation constitutes a permanent threat to the very existence of the euro as the single and common currency.

The transformation of the ECB and its apparent interventionism since 2007–9 are conditioned by this underlying reality. It is shown in this article that the trajectory of the balance sheet of the ECB was influenced by the need to cover the cracks of the money market of the EMU, and thus to protect the very existence of the euro. There is no such pressure on the Federal Reserve, or indeed on other central banks.[4]

In a little more detail, central banks typically intervene via money markets and thus seek to maintain these markets working smoothly and trading within set prices. To this purpose central banks currently deploy two instruments: first, the (short term) interest rate and, second, their balance sheets.[5] Both could be steered according to the objectives of the central bank ('exogenously') and mobilised in response to market shocks, especially to maintain financial stability, as in 2007–9 and on several other occasions.

In the case of the ECB, however, the issue of financial stability is particularly acute because the transmission mechanisms for the interest rate – that is, the plumbing and functioning of the money markets – are fragmented along national jurisdictions and issuers. The implication is that the ECB in practice intervenes in (and shapes) national debt trading in distinct ways, delivering powerful macroeconomic and political outcomes for each country in practice. Consequently, the ECB has had to restrain itself, if it is to continue abiding by the rules of neutrality that dictate its conduct. Rather than being activist, it operates as a 'market-guaranteeing' central bank, that is, its primary aim is to provide the required degree of intervention to minimise or counter national fragmentation.

In analysing the conduct of the ECB, this paper contributes to multiple strands of the relevant literature. It complements the scholarly work on the working of European Central Bank and the institutions of the Eurozone.[6] It delves into heterodox monetary theory, drawing on Marxist

[3]The literature on this point is large; for some recent offerings see PD Tortola, 'The Politicization of the European Central Bank: What Is It, and How to Study It?' 58 (2020) Journal of Common Market Studies 501; AM Mooij, 'The role of the European Central Bank in response to COVID19. An evaluation of its mandate' 45 (2023) Journal of European Integration 649; CH Hartwell, 'What Is the European Central Bank Supposed to Do?' 13 (2023) Accounting, Economics and Law: a Convivium 217. Note further that even K Whelan, 'Accountability at the Fed and the ECB', (2022) Monetary Dialogue Papers, European Parliament, September <https://www.europarl.europa.eu/cmsdata/211437/1_WHELAN-final.pdf>, a stalwart defender, acknowledges that the ECB is less accountable to democratic bodies, while its methods in appointing governors are more obscure compared to the Fed.

[4]Suffice it to note that, although the Federal Reserve System has 12 jurisdictions, the Fed intervenes in the single and unified money market of the New York jurisdiction solely via the Federal Reserve Bank of New York.

[5]Forward guidance has also been extensively used by the ECB, see J Haan, 'No Way Back? ECB's Forward Guidance and Policy Normalisation' 13 (2025) Politics and Governance 8953 <https://doi.org/10.17645/pag.8953>. Its overall effectiveness seems ambiguous as it might have facilitated the loosening of monetary policy but impeded its tightening.

[6]Selectively, J van 't Klooster and C Fontan, 'The Myth of Market Neutrality: A Comparative Study of the European Central Bank's and the Swiss National Bank's Corporate Security Purchases', 25 (2020) New Political Economy 865; S Diessner and G Lisi, 'Masters of the "Masters of the Universe"? Monetary, Fiscal and Financial Dominance in the Eurozone' 18 (2020) Socio-Economic Review 315; M Moschella and NM Diodati, 'Does Politics Drive Conflict in Central Banks' Committees? Lifting the Veil on the European Central Bank Consensus' 21 (2020) European Union Politics 183; H van Doorslaer and

monetary theory[7] and exploring commonalities with other approaches, such as the 'Money View'.[8] It also provides further analysis of the political economic dimension of the current macro-financial system characterised by enlarged central banks and market-based (shadow) finance.[9] Finally, it makes a contribution to the International Political Economy literature on central banking.[10]

To demonstrate its claims, the paper proceeds as follows. Section 2 establishes the transformation of the ECB by focusing on its balance sheet. Section 3 outlines a theoretical framework for the conduct of central banking by drawing on an analysis of monetary and hierarchies deriving from heterodox monetary theory and political economy. In this light, Section 4 considers the change in the framework of monetary policy by the ECB since 2007–9 and points to the impact of money market fragmentation. Section 5 then delves more fully into the specific character of fragmentation by considering the workings of the EMU money market, and specifically the secured repo segment. On this basis, Section 6 focuses on the consequences of fragmentation by looking at the adaptation of collateral policies. Section 7 concludes.

2. Central banking in the interregnum: from expansion to contraction of balance sheets

The evolution of the balance sheet of the ECB since the Great Crisis of 2007–9 is reminiscent of that of the Federal Reserve, and indeed of other central banks of the core countries of the world economy. Summarily put, rapid and (more or less) sustained expansion after 2007 was followed by contraction after 2022 as inflation took off.

Elsewhere this period has been called an 'interregnum'.[11] To be more specific, the Great Crisis signalled the peaking of both financialisation and globalisation, tendencies that have marked contemporary capitalism for several decades. The weakening of these tendencies has not, however, led to the emergence of a new direction of capitalist accumulation at the core of the world

M Vermeiren, 'Pushing on a String. Monetary Policy, Growth Models and the Persistence of Low Inflation in Advanced Capitalism' 26 (2021) New Political Economy 797; D Meyer, *European Union and Monetary Union in Permanent Crisis I. An Inventory* (Springer 2022); S Mudge and A Vauchez, 'Dependence on Independence. Central Bank Lawyers and the (Un) Making of the European Economy' 51 (2022) Economy and Society 584; L Quaglia and A Verdun, 'Explaining the response of the ECB to the COVID19 related economic crisis. Inter-crisis and intra-crisis learning' 30 (2023) Journal of European Public Policy 635; L Spielberger, 'The Politicisation of the European Central Bank and its Emergency Credit Lines Outside the Euro Area', 30 (2023) Journal of European Public Policy 873; S Murau and M Giordano, 'Forging Monetary Unification Through Novation: The TARGET System and The Politics of Central Banking in Europe', 22 (2024) Socio-Economic Review 1283.

[7] C Lapavitsas, 'The Theory of Credit Money: a structural analysis' 55 (1991) Science and Society 291.

[8] P Mehrling, *The new Lombard Street: how the fed became the dealer of last resort* (Princeton University Press 2010); P Mehrling, Z Pozsar, J Sweeney and DH Neilson, 'Bagehot was a shadow banker: shadow banking, central banking, and the future of global finance' (2013) <https://doi.org/10.2139/ssrn.2232016>; P Mehrling, 'The inherent hierarchy of money' in L Taylor, A Rezai and T Michl (eds), *Social fairness and economics: economic essays in the spirit of Duncan Foley* (Routledge 2013) 394.

[9] D Gabor and C Ban, 'Banking on Bonds: The New Links Between States and Markets' 54 (2016) Journal of Common Market Studies 617; D Gabor and J Vestergaard, 'Chasing Unicorns: The European Single Safe Asset Project', 22 (2018) Competition and Change 139; D Gabor, 'Critical Macro-finance: A Theoretical Lens', 6 (2020) Finance Society 45.

[10] L Broz and J Frieden, 'The Political Economy of International Monetary Relations' 4 (2001) Annual Review of Political Science 317; H Schwartz, 'American Hegemony. Intellectual Property Rights, Dollar Centrality, and Infrastructural Power', 26 (2019) Review of International Political Economy 490; O Özgöde, 'The Emergence of Systemic Risk: The Federal Reserve, Bailouts, and Monetary Government at the Limits' 20 (2022) Socio-Economic Review 2041; P Mehrling, *Money and Empire. Charles P. Kindleberger and the Dollar System* (Cambridge University Press 2022); L Wansleben, *The Rise of Central Banks. State Power in Financial Capitalism* (Harvard University Press 2022); F Musthaq, 'Unconventional Central Banking and the Politics of Liquidity' 30 (2023) Review of International Political Economy 281; E Monnet, *Balance of Power. Central Banks and the Fate of Democracies* (Chicago University Press 2024).

[11] C Lapavitsas and the EReNSEP Writing Collective, *The State of Capitalism: Economy, Society, and Hegemony* (Verso 2023).

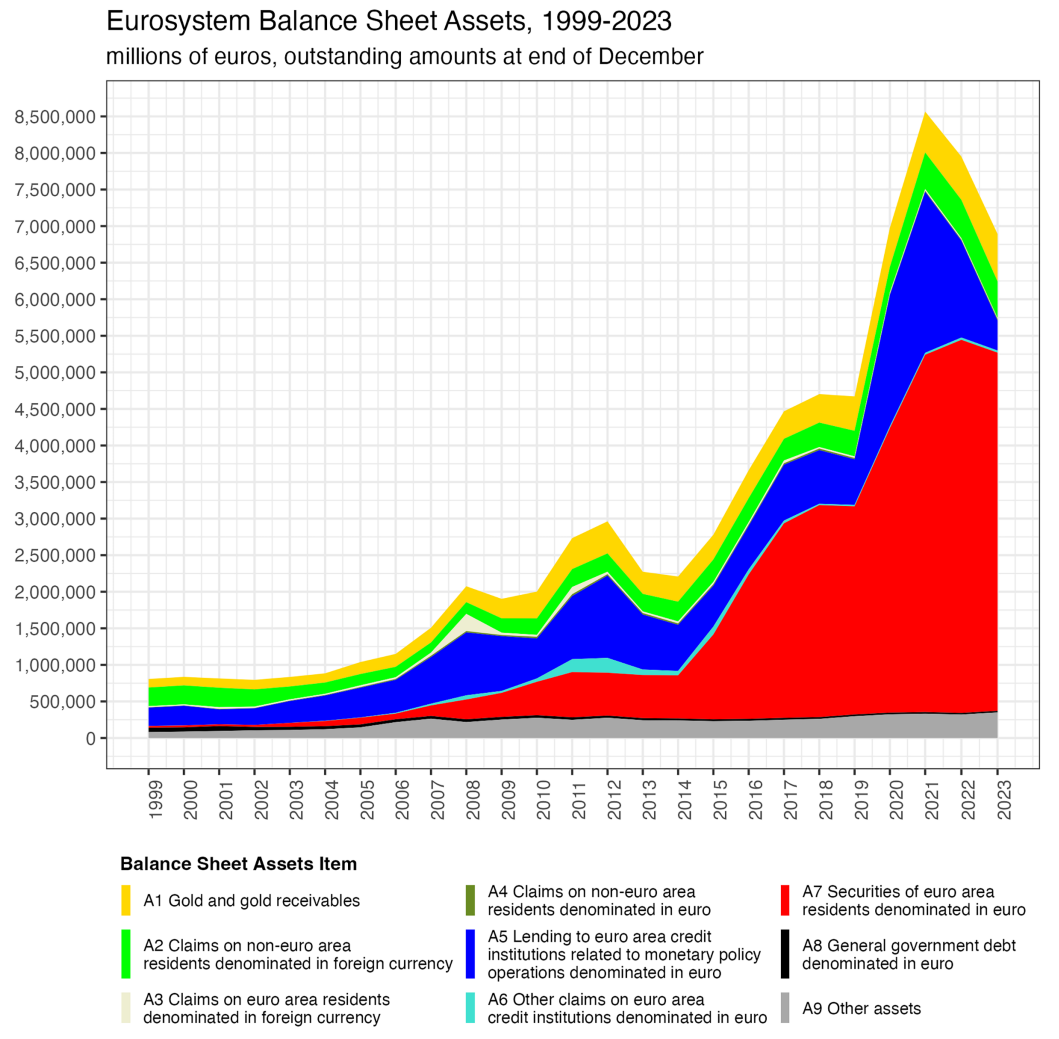


Figure 1. Eurosystem Balance Sheet, Assets (euro millions), 1999–2023.
Source: Elaborations on ECB and SDW.

economy, which remains marked by poor growth, low investment, and sluggish productivity of labour.

The transformation of central banks is a characteristic feature of the interregnum and a crucial lever for dealing with the pressures of the period. Core economies tackled the Great Crisis of 2007–9 and the Pandemic Crisis of 2020–21 primarily through the creation of fiat money by central banks taking place concurrently with rapidly expanding public debt. Fiat money creation and public debt were also pivotal to overall economic performance during 2010–19, the period between the two crises.

Suffice it merely to observe the balance sheet of the Eurosystem in Figures 1 and 2. The balance sheet began to grow significantly in 2007, retreated briefly as the Great Crisis subsided, expanded again rapidly as the Great Crisis mutated into the Eurozone Crisis of 2010–12, retreated again briefly after 2012, but expanded even more rapidly as Quantitative Easing was adopted after 2015, before escalating beyond precedent when the Pandemic Crisis broke out in 2020.

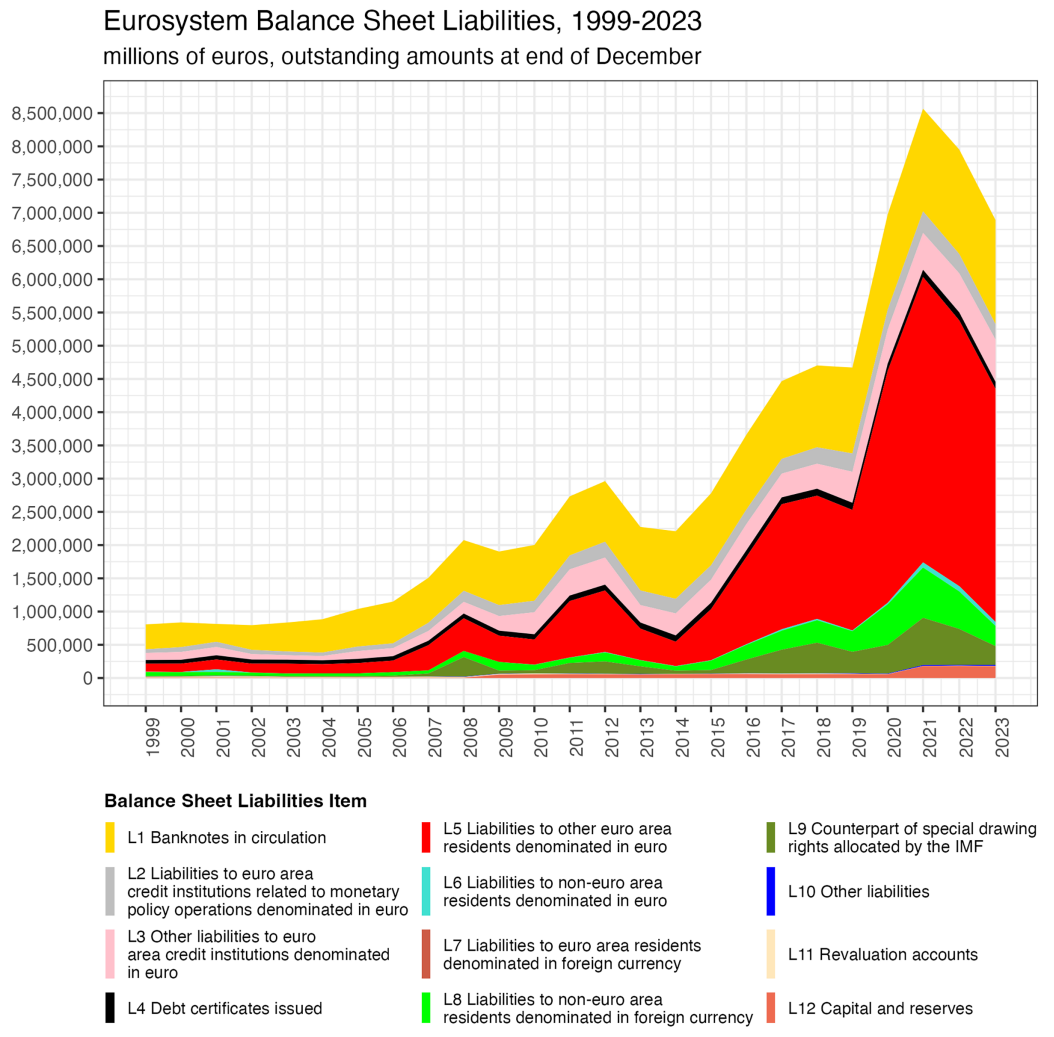


Figure 2. Eurosystem Balance Sheet, Liabilities (euro millions), 1999–2023.
Source: Elaborations on ECB and SDW.

At the peak of its enlargement in June 2022, the balance sheet of the Eurosystem stood at €8.8 trillion, which was more than 60 per cent of the GDP of the European Economic and Monetary Union, compared to 36 per cent of US GDP for the Fed balance sheet. Figure 1 shows that much of this growth derived from a variety of short- and long-term loans to commercial banks, provided through refinancing operations. An even larger increase derived from the acquisition of public and private securities as part of the ECB's securities purchase programmes – ie, from Quantitative Easing.[12] On the other hand, the corresponding growth of liabilities, shown in Figure 2, involved primarily two components: first, banknotes, the use of which increased substantially since the Great Crisis, and second, central bank reserves of commercial banks, which also increased tremendously.

[12]Indeed, the securities of euro area residents on the balance sheet (red area item A7 in Figure 1) increased from €270 bn in 2008 to €2.8 tr in 2019 as a result of the purchase packages connected to the Eurozone crisis (around 80 per cent of the increase occurred between 2014 and 2019) and peaked at €5.1 tr in 2022 following the response to the COVID19 crisis.

It hardly needs stating that banknotes and bank reserves are essentially forms of fiat money, that is, of publicly provided liquidity, the validity of which rests ultimately on some form of political authority. In the case of the EMU and the ECB, the nature of this authority is manifestly different from that of other central banks since there is no overarching state in the European Union. This is the defining peculiarity of the ECB, which is also reflected in the fragmentation of the money market of the EMU.

The balance sheet of the ECB began to contract significantly in late 2022. However, contraction proved slow: in January 2025 the balance sheet still stood at a gigantic €6.4 trillion. On the liability side, the contraction amounted primarily to a reduction of bank reserves, while banknotes broadly maintained their volume. On the asset side, the contraction reflected largely a decline of refinancing loans to commercial banks, while securities holdings remained exceptionally voluminous. In sum, the ECB restricted its lending to commercial banks, leading to a reduction to bank-held fiat money, but maintained its securities holdings, in line with the approach to the fading out of Quantitative Easing and the gradual implementation of Quantitative Tightening – first by not reinvesting the matured funds, and later by outright selling assets.

The decisive event was the rise of inflation in 2022, leading to Quantitative Tightening and the rapid rise of interest rates. To be sure, there were also attempts to reduce balance sheets and raise interest rates at other times in the 2010s. These provided the first indications of the difficulties that such a course of action would entail, including the so-called 'money market tantrum' of US repo markets in late 2019.[13] But the real nature of the difficulties and the qualitative shift that had taken place since the Great Crisis of 2007–9 became clear only after 2022.

Summarily put, the policy shift in 2022 showed that there is no symmetry between Quantitative Easing and Quantitative Tightening. The preceding period of dramatic asset and liability expansion impacted severely on the functioning of money markets, not to mention the management of public debt in core countries. Abundant central bank liquidity and unprecedented hoarding of fiat money in the form of reserves have become integral to the operations of commercial banks. This development represents a historic disruption of the functioning of the money market by distorting the price mechanism. Moreover, the vast holdings of public and private debt by central banks entail significant risks of capital losses in case of mass securities sales.

Both the Fed and the ECB are confronted with money markets that have been flooded with public liquidity hoarded by commercial banks. The actions of both central banks have distorted the functioning of money markets to lower the price of borrowing by deploying extensive balance sheet policies. But the ECB also faces a money market that is inherently fragmented, thus placing at risk the common money used by commercial banks and other market agents in the EMU. The extent to which the Federal Reserve needs to be concerned with the international functioning of the dollar is much less than the ECB's transnational concerns regarding the euro. The former focuses primarily on domestic macroeconomic issues, whilst the latter remains heavily concerned with regional integration pivoting on the euro.

It is well known that the mandate of the two central banks is different, with the Fed aiming to deliver both price stability and maximum employment, whereas the primary mandate of the ECB, established through the Maastricht Treaty, was to maintain price stability. There is evidence that

[13]Repo Markets, short for 'repurchase agreement markets', are short term money markets primarily used as funding instruments akin to secured loans. In fact, the repo borrower sells a security to the repo lender (in exchange of cash) with the promise of buying the security back at a later date. The accounting mechanics of repo transactions can be appreciated in S Murau, AS Goghie and M Giordano, 'Encumbered Security? Vertical and Horizontal Repos in the Euro Area and Their Inherent Ambiguity' 11 (2025) Journal of Financial Regulation 166. The legal values of the various transactions involved differ in the US compared to Europe, see <https://www.icmagroup.org/market-practice-and-regulatory-policy/repo-and-collateral-markets/icma-ercc-publications/frequently-asked-questions-on-repo/1-what-is-a-repo/>.

the primary mandate was in practice reinterpreted in the 2020s to include at least financial stability and climate considerations.[14] However, maintaining price stability is assumed to be a fundamental part of achieving monetary integration in Europe, and that remains by far the main concern of the ECB.

Note further that the dual mandate of the US central bank did not originate in the Fed's establishment in 1913. The Fed did not initially have a proper mandate and only catered to the needs of a banking system plagued by runs and failures. Its establishment mostly had the purpose of ensuring financial stability and was associated with the functioning of clearing houses.[15] The current mandate began to take shape in 1946 as part of the Employment Act, and its final formulation was adopted in 1978 with the Humphrey–Hawkins Act (Full Employment and Balanced Growth Act). The objectives mentioned were 'production', 'employment', 'prices', and the 'interest rate', without any mention of the balance of payment or supra-national considerations.

The ECB not only has a narrower mandate, but also undertakes monetary policy under heavier constraints. For, it must use essentially the same tools as the Fed – above all, the interest rate and its balance sheet – not only to meet inflation or other targets, but also and especially to guarantee the continuing existence of the euro. Even worse for the ECB, the European money market which underpins the existence of the euro is structurally fragmented. The ECB is thus forced to deploy monetary policy with the additional purpose of allowing the euro to survive. This has been a crucial factor in the transformation of the ECB and its apparent interventionism in the interregnum.

The famous statement by Mario Draghi that the ECB would do 'whatever it takes' to rescue the euro is frequently mentioned in the literature, usually to attest the power and success of ECB in delivering monetary policy.[16] But its deeper significance lies elsewhere. What Draghi truly declared in 2012 is that rescuing the euro is the overriding concern of the ECB and remains the unspoken constraint in designing and implementing monetary policy. In this respect, the ECB is the opposite of the Federal Reserve. Whilst the latter can take for granted the existence of the dollar as the fiat money of the US nation state, the ECB must strive to ensure the survival of the euro as the fiat money of an alliance of nation states.[17]

To be sure, the Fed has also had to engage in stabilising action in response to macro-financial turbulence since 2007–9. Suffice it to mention its emergency injection of liquidity (at around $75 bn) in repo markets in September 2019. Such actions, however, tend to be ad hoc interventions that do not determine the overall framework of monetary policy. In contrast, the response of the ECB to macro-financial events is guided by the need to ensure the survival of its own money, and always by using a transmission mechanism that relies on market-based funding but operates in fragmented markets. ECB interventionism is less an active policy aimed at stimulating macroeconomics activity, and more the passive policy of a central bank that is implemented in response to macro-financial turbulence.

[14]D Argyroulis and N Vagdoutis, 'Revisiting ECB's Technocratic Legitimacy: No Longer Fit-for-Purpose?' 13 (2025) Politics and Governance 9094 <https://doi.org/10.17645/pag.9094>. There is also evidence that the expanded mandate in practice has created fresh problems of democratic accountability for the ECB, see A Högenauer and J Mendes, 'Maastricht Overcome: An Evolving Disconnect Between the ECB's Power and Independence' 13 (2025) Politics and Governance 9810 <https://doi.org/10.17645/pag.9810>.

[15]MD Bordo, 'The Lender of Last Resort: Alternative Views and Historical Experience' 76 (1990) Economic Review 18; RR Chaudhuri, *The Changing Face of American Banking* (Palgrave Macmillan 2014).

[16]M Draghi, 'Interview with Der Spiegel' (2012) European Central Bank, <https://www.ecb.europa.eu/press/inter/date/2012/html/sp121029.en.html>.

[17]The Fed must also protect the global role of the dollar, as it has done since the Great Crisis of 2007–9 through foreign exchange swaps with selected central banks. But that does not exercise a similarly constraining influence on its monetary policy.

3. The hierarchy of money and credit and the role of the money market

To proceed further at this point, it is necessary to specify a theoretical framework. The approach adopted below derives from the heterodox tradition of money and finance, with strong foundations in Marxist political economy.[18] Two of its aspects are important for our purposes.

First, there is a hierarchy of forms of money in both the domestic and the world economy.[19] In the domestic economy, private forms of money are frequently generated through market transactions, primarily but not exclusively through the credit system, such as bank deposits, but also various types of e-money associated with telephony, and so on. There are also public forms of money, such as the fiat forms mentioned in Section 2. All domestic monies are hierarchically arranged from less to more liquid. Central bank fiat sits at the top, and the liquidity of other forms – and thus their 'moneyness' – is crucially affected by the ability to convert into fiat money at the rate of 1:1.

Second, the hierarchy of money is inextricably linked to the hierarchy of credit, or the 'pyramid of credit'. This hierarchy of money is recognised, though with fundamental differences in terms of the ontology of money per se, by various heterodox economists.[20] The hierarchy of credit relations and their organic connection to capitalist accumulation is characteristic of Marxist monetary theory. To be specific, credit relations are hierarchically arrayed from bottom to top in the following order: trade credit, banking (or monetary) credit, money market credit, and central bank credit. The hierarchical array of credit rests ultimately on the production of value and profit by non-financial corporations.[21]

Crucial for our purposes is that the quality of credit rises as the pyramid is traversed from bottom to top. Credit quality depends on a host of factors, including the likelihood of repayment according to contract, but a vital constituent is also the fungibility of the credit instrument. The importance of this point could be appreciated by considering credit in its most fundamental sense, ie, as a promise to pay (a liability) issued by a debtor and bought by a creditor. In other words, different types of credit have different ability to discharge existing credit relations between debtors and creditors.[22]

The quality of a promise to pay rests, first, on the capacity of the debtor to repay, which depends, first and foremost, on the generation of returns through the debtor's productive and commercial operations. The least that the creditor should do in this respect is to undertake an examination of the debtor's activities. Equally critical for credit quality, however, is confidence that the liability would be accepted by still others in unrelated payments or purchases, that is, on its fungibility. The determinants of fungibility are broader than mere ability to repay.

Above all, fungibility depends on the range of assets that are arrayed against the promise to pay on the issuer's (debtor's) balance sheet. Other things equal, the broader, larger, and more secure the array of assets, the greater would be the confidence of the holder that others would also accept in payment. Consequently, a liability issued by a bank and buttressed by a broad array of assets from across a broad range of sectors of the economy (essentially the loans and securities held by the bank) would normally be more fungible than a liability issued by a non-bank enterprise, since

[18]M Itoh and C Lapavitsas, *Political Economy of Money and Finance* (Macmillan 1999); C Lapavitsas, *Profiting without Producing: How Finance Exploits Us All* (Verso 2013).

[19]Lapavitsas (n 8); C Lapavitsas, *Social Foundations of Markets, Money and Credit* (Routledge 2003); Mehrling (n 9).

[20]MA Innes, 'The Credit Theory of Money', 31 (1914) Banking Law Journal 151; LR Wray, *Money and Credit in Capitalist Economies: The Endogenous Money Approach* (Edward Elgar 1990); LR Wray, 'State Money', 32 (2002) International Journal of Political Economy 23; G Ingham, 'The Emergence of Capitalist Credit Money', in LR Wray, *Credit and State Theories of Money: The Contributions of A. Mitchell Innes* (Edward Elgar 2004) 173; E Tymoigne and LR Wray, 'Modern Money Theory 101: A Reply to Critics' (2013) The Levy Economics Institute, Working Paper No. 778, available at: <https://www.levyinstitute.org/wp-content/uploads/2024/02/wp_778.pdf>; SA Chambers, 'The Money Array; or, Show Me the Debtor' 9 (2023) Finance and Society 1.

[21]Lapavitsas (n 19).

[22]S Rossi, *Money and Payments in Theory and Practice* (Routledge 2007).

the latter would typically be buttressed by a far narrower range of assets. This is ultimately the reason why the liabilities of commercial banks achieve far greater liquidity – and thus attain greater 'moneyness' – than the liabilities of non-financial enterprises.[23]

Put differently, a bank is a specialist in borrowing and lending across a range of sectors, whereas a non-financial enterprise engages in borrowing and lending largely as dictated by the needs of production and trade in its own sector. Trust in the bank's liabilities depends on the bank successfully anticipating the return of the capital of a range of enterprises, the liabilities of which appear as assets on its own balance sheet. If the bank performs this task regularly and well, its liabilities will have a higher fungibility than those of a non-financial enterprise.

By the same token, the liabilities of the central bank normally represent the highest quality of credit in the domestic economy – so high that they have been even argued to be *only* assets.[24] They are a social form of credit supported by public assets that rely on returns across all sectors of the economy, which are then taxed by the state. Moreover, central bank liabilities are also guaranteed explicitly or implicitly by the state. Consequently, they normally have the highest grade of liquidity and constitute the fiat money of contemporary capitalism into which private forms of money (typically the liabilities of private banks) must be convertible at 1:1.

The creation of fiat money by the central bank is integrally linked to the operations of the money market, which is the most vital layer of the credit hierarchy, since it is the site at which commercial banks transact their reserves of fiat money.[25] Money market credit is fundamental to the functioning of the credit pyramid. Given that both creditors and debtors are specialists in the business of borrowing and lending, such credit is of a higher quality than regular bank credit, and thus the attached interest rate becomes the benchmark for the credit pyramid.

The most fundamental task for the central bank is to oversee and manage the trading of reserves of fiat money (liquidity) by commercial banks. To this purpose, the central bank must anticipate the aggregate flows of loanable capital in the money market and accordingly issue its own liabilities to participating banks. Since its liabilities are directly fiat money, it can continue to issue these, thereby providing liquidity to commercial banks, even if it anticipates that the expected flow of loanable capital in the market is likely to be lower than normal for a period. On this basis, the central bank is in a pivot position to affect the rate of interest in the money market, and thus to impact the spectrum of interest rates across the credit system.

The crucial assumption in this respect is that the money market is a homogeneous site of regular borrowing and lending of reserves among commercial banks. If the market functions in this manner, the rate of interest is competitively determined according to the demand and supply of loanable capital by private agents. The central bank merely supervises and guarantees this process. If, however, reserves are not competitively transacted among banks, the rate of interest is not competitively determined. The money market is not operating normally, and the functioning of the central bank becomes profoundly different.

In this respect, the balance sheet of the central bank is both a key instrument and a record of operations. This is ultimately the reason for the close attention paid to the ECB balance sheet in Section 2. It is apparent that since 2007–9 the ECB – similarly to the Federal Reserve and other core central banks – has effectively engulfed the money market. It has thereby limited the private trading of reserves among commercial banks, while driving the rate of interest toward zero for several years before rapidly raising it.

[23]Lapavitsas (n 19); C Lapavitsas, *Marxist Monetary Theory: Collected Papers of Costas Lapavitsas* (Brill 2017).

[24]M Kumhof, JG Allen, W Bateman, RM Lastra, S Gleeson and ST Omarova, 'Central Bank Money: Liability, Asset, or Equity of the Nation?' (2020) SSRN Electronic Journal <https://doi.org/10.2139/ssrn.3730608>

[25]The money market is broader than the interbank market since it also contains non-commercial banks but also other large economic agents. Still, its core area is the interbank market. For our purposes, the two terms will be used interchangeably, unless otherwise specified.

For the ECB, furthermore, this transformation has occurred in a money market that is structurally fragmented,[26] thereby posing a direct threat to the acceptability of the liabilities of private banks but also of the liabilities of the ECB, that is, of the euro. A major goal of the ECB in this context has been to cover the cracks of the money market and protect the euro. Nearly two decades later, the transformation of both central banking and money markets has brought monetary policy to an impasse in Europe.

4. The quandary in ECB monetary policy

The Great Crisis of 2007–9 delivered a major shock to the operational framework of ECB monetary policy.[27] Until then, the ECB intervened in the money market through the so-called 'corridor' system, which involved three interest rates paid or charged by the central bank, namely:

i) the Deposit Facility Rate (DFR), paid to banks holding reserves with the ECB

ii) the Marginal Lending Rate (MLR), charged to banks borrowing overnight from the ECB and usually for pressing reasons

iii) the Main Refinancing Rate (MRO), charged to banks borrowing for longer periods from the ECB

As is shown in Figure 3, the upper bound of the corridor was set by MLR, since no bank with access to ECB would pay a higher rate of interest to borrow reserves in the money market. The lower bound was set by DFR, since no bank with access to ECB would accept a lower rate for lending its spare reserves in the money market. The Refinancing Rate was charged for regular borrowing from the ECB and obviously fluctuated within the corridor.

The policy aim of the ECB was to turn the Refinancing Rate into the market rate, thus exercising a controlling influence on interest rates across the credit system. To this purpose, the ECB had to estimate the quantity of additional liquidity required by market participants at any time and subsequently provide this liquidity at the chosen Refinancing Rate by auctioning it among banks. The interbank market would then engage in transacting all available liquidity among participating banks, thereby charging interest rates according to the risk profile of each borrowing bank.

In effect, the ECB had to anticipate the incoming flow of very short-term loanable capital in the money market together with the liquidity needs of the participating banks. On this basis, it would supply a fixed quantity of liquidity in the form of reserves of fiat money, ie, as its own liabilities. That quantity would be auctioned at the chosen interest rate by the ECB, thus keeping the Refinancing Rate within the corridor and allowing it to act as a benchmark for further private transactions among banks in the money market.

This framework came to an end during and after the Great Crisis of 2007–9 and what emerged was the 'floor' system. Summarily put, the three rates remained in use, but the ECB stopped

[26]M Ehrmann and M Fratzscher, 'Euro area government bonds – integration and fragmentation during the sovereign debt crisis' (2015) CEPR Discussion Paper 10583, available at: <https://cepr.org/publications/dp10583>; J Eisenschmidt, D Kedan and R Tietz, 'Measuring Fragmentation in the Euro Area Unsecured Overnight Interbank Money Market: A Monetary Policy Transmission Approach' 5 (2018) ECB Economic Bulletin Issue 72; M Giordano, *Monetary Subordination in the Eurozone: Fragmentation and tiering of markets and institutions* (SOAS University of London 2025) available at: <https://doi.org/10.25501/SOAS.00043701>.

[27]The transformation of the framework of ECB monetary policy since 2007-9 has been widely discussed. A clear analytical summary can be found in I Schnabel, 'The Eurosystem's operational framework', speech delivered at the Money Market Contact Group meeting, 14 March 2024, available at: <https://www.ecb.europa.eu/press/key/date/2024/html/ecb.sp240314~8b609de772.en.html>.

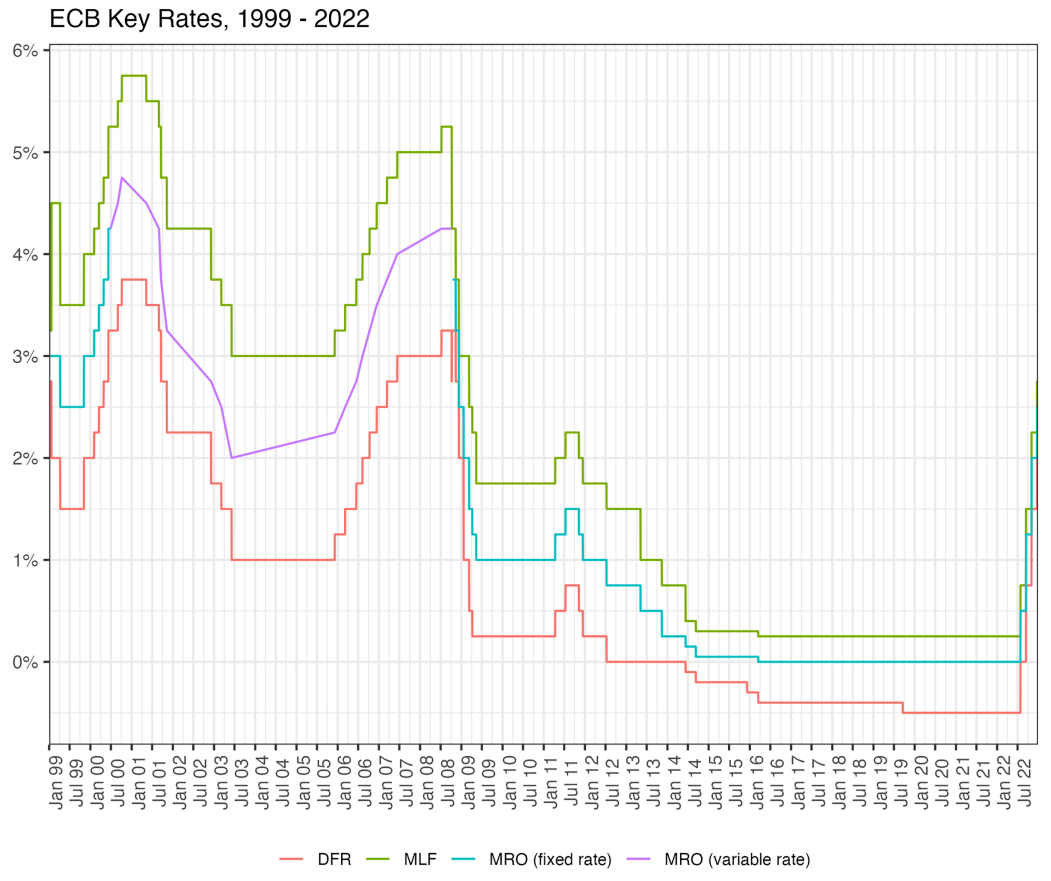


Figure 3. Key Rates of the ECB, 1999–2022.
Source: Elaborations on ECB and SDW.

estimating the additional demand for liquidity and subsequently supplying it at the chosen interest rate. The practice that gradually commenced – and holds today even if with variations – was to supply any volume of liquidity on demand to participant banks.

The new framework began to emerge in 2008, at the peak of the Great Crisis, as the ECB supplied liquidity on 'full allotment', that is, according to the demand by banks and without limiting the sum total to a fixed amount. The practice soon led to banks holding substantial volumes of ECB-supplied liquidity in the form of deposits with the central bank, thus leading to the phenomenon of 'excess reserves', explained in more detail below. Moreover, since ECB-supplied liquidity became abundant, the Refinancing Rate was driven toward the lower end of the corridor, and thus the DFR became the floor of the market rate.

The true establishment of the new framework, however, took place in 2011–12, at the peak of the Eurozone Crisis. Confronted with the possible collapse of the euro, the ECB hastily introduced various novel refinancing operations for banks in addition to its Main Refinancing Operations, for instance, Long-Term Refinancing Operations (LTRO), Very Long-term Refinancing Operations (vLTRO), and Targeted Long-Term Refinancing Operations (TLTRO).

The framework took further shape as the ECB engaged in a series of financial asset buying programmes to confront the Great Crisis of 2007–9 and the Pandemic Crisis of 2020–21, but more

fundamentally to ensure the survival of the euro.[28] Unprecedented volumes of securities were bought from both the public and the private sectors under such rubrics as the Securities Market Programme, the Asset Purchase Programme, and the Pandemic Emergency Purchase Programme.

The enormous expansion of the balance sheet of the ECB discussed in Section 2 is a direct result of providing refinancing facilities to banks on demand together with buying great volumes of securities. The policy, meanwhile, successfully drove the money market rate of interest toward zero. The functioning of the European money market was thus placed on a different footing.

For one thing, commercial banks could expect to borrow all the liquidity they needed from the ECB at rates close to zero, thus having little reason to seek liquidity commercially. Confronted with the extraordinary uncertainty that has marked the period of the interregnum, banks opted to keep much of the borrowed liquidity as reserves deposited with the ECB.[29] Since, moreover, they had borrowed at the floor rate from the ECB, the banks could make secure profits by purchasing public bonds, which paid a higher rate and were issued by EMU Member States in increasing volumes as public debt escalated during the period.

In short, the ECB engulfed the European money market and created a new monetary policy framework that protected the banks while providing them with a public subsidy. Furthermore, by accumulating securities and providing loans to banks financed through the issuing of fiat money, the ECB effectively transferred risks from the private sector (both the financial and the non-financial) onto the public sector.

This merry-go-round came to an end with the escalation of inflation in 2022.[30] To contain inflation the central bank began to raise interest rates substantially while engaging in a contraction of its balance sheet. A new framework of monetary policy became necessary, but the ECB appeared to lack clear ideas on how to do it.[31] There was no doubt that the floor system had costs, which would probably emerge gradually over time.[32] It was also clear to many that, if the ECB maintained an enormous balance sheet indefinitely, it would lose some of its ability to protect the euro, should fiscal fragility re-emerge among EMU members, a unique risk that did not exist for the Fed.[33]

[28]For Schnabel (see I. Schnabel, 'The benefits and costs of asset purchases', Member of the Executive Board of the ECB, speech delivered at the 2024 BOJ-IMES Conference on "Price Dynamics and Monetary Policy Challenges: Lessons Learned and Going Forward", 28 May, available at: <https://www.ecb.europa.eu/press/key/date/2024/html/ecb.sp240528~a4f151497d.en.html> and I. Schnabel, 'Is monetary policy dominated by fiscal policy?', speech delivered at a conference organised by Stiftung Geld und Währung on 25 years of the euro – Perspectives for monetary and fiscal policy in an unstable world, 7 June, available at: <https://www.ecb.europa.eu/press/key/date/2024/html/ecb.sp240607~c6ae070dc0.en.html>), avoiding 'fragmentation in the euro area' was one of the strongest merits of the change in ECB monetary policy. The subtext is the same for Lane (see P. Lane, 'Central bank liquidity: a macroeconomic perspective', Member of the Executive Board of the ECB, welcome address at the ECB Conference on Money Markets, 9 November, available at: <https://www.ecb.europa.eu/press/key/date/2023/html/ecb.sp231109~fd9153a89f.en.html>), another leading practitioner of ECB monetary policy.

[29]L Baldo, B Hallinger, C Helmus, N Herrala, D Martins, F Mohing and F Petroulakis, 'The Distribution of Excess Liquidity in the Euro Area' (2017) ECB Occasional Paper Series 200, available at: <https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op200.en.pdf>.

[30]The factors leading to the acceleration of inflation during and after 2022 are not directly relevant to our purposes. It is clear, nonetheless, that the Quantity Theory of Money has little explanatory power in this respect. Answers must be sought in the interaction of aggregate demand and supply paying particular attention to the pricing practices of large corporations and the extraction of extraordinary profits. For a useful review of the relevant literature see D Martins, 'The post-pandemic inflation debate: a critical review', 77 (2024) PSL Quarterly Review, 439, available at: <https://doi.org/10.13133/2037-3643/18549>.

[31]Suffice to mention Schnabel (I Schnabel, 'The ECB's balance sheet reduction: an interim assessment'. Speech at the annual ECB Conference on Money Markets, Frankfurt, 7 November 2024, available at: <https://www.ecb.europa.eu/press/key/date/2024/html/ecb.sp241107~7d53987569.en.html>), who presents a positive 'interim' picture of banks gradually adapting to the contraction of reserves while liquidity remains 'ample'. But there is no new framework emerging, and nor is it evident that the ECB could return to the floor system.

[32]C Borio, 'Getting up from the floor' (2023) BIS Working Papers 1100, available at: <https://www.bis.org/publ/work1100.pdf>.

[33]I Angeloni, 'Ample liquidity puts the ECB's independence at risk' (2023) <https://www.omfif.org/2023/01/ample-liquidity-puts-the-ecbs-independence-at-risk/>; I Angeloni, 'Reversing the Great Monetary Expansion', 58 (2023) Intereconomics 142.

The problems that accumulated during the floor policy were indeed substantial. For one thing, the excess reserves held by commercial banks with the ECB were heavily concentrated along national lines rather than being spread equitably among participating banks, as is shown in Section 5. German banks, in particular, played a pivotal role in the holding of reserves in the Eurosystem compared to banks from the periphery of the EMU. The fragmentation of the money market and the inherent asymmetry within the EMU became manifest.

For another, the floor of the money market proved 'leaky' as there were several participants in borrowing and lending transactions that did not have access to the ECB, for instance, non-commercial banks. For such agents, it made sense to hold liquidity in the form of deposits with banks that had access to the ECB, even if these deposits paid interest below the DFR. Easy availability of liquidity prevailed over low interest earned by the deposit holders.

For yet another, the huge volume of securities held by the ECB created shortages of suitable collateral in the money market, especially in the repo sections. The ability of commercial banks to borrow from each other was severely impacted, thus encouraging banks to resort to the ECB, which eventually expanded the Securities Lending programme first in 2016 and then again in 2020 as the securities held on its balance sheet ballooned.

Finally, it became apparent that the banks continued to require access to an ample supply of reserves as the balance sheet of the central bank began to contract. In part this was due to the sustained growth of banknotes during this period. To provide banknotes on demand, commercial banks required significant reserves held at the ECB. More important than that, however, was the persistent uncertainty of financial conditions in the interregnum and the habituation of banks to holding ample liquidity with the central bank.

Faced with these problems, the ECB opted for contracting its balance sheet primarily through limiting the provision of refinancing as the existing loans to banks mature and are repaid. But the ECB continues to maintain vast holdings of securities since there is no easy way of reducing these through sales that would result in significant losses for the central bank. At the same time, the ECB continues to reassure the banks that they will still be able to obtain ample liquidity although through repo transactions rather than refinancing policies. The floor system would presumably be maintained as the repos would be offered at the DFR, while the central bank would do it best to avoid any 'stigma' being attached to a bank seeking liquidity in this manner. This approach, which hardly merits the name of policy, has been called a 'parsimonious floor'.[34]

In short, the ECB – similarly to other central banks – found itself at a loss on how to recalibrate the framework of monetary policy after nearly two decades of extraordinary intervention that has practically institutionalised the malfunctioning of the money market. But matters were greatly complicated by the fragmented nature of the European money market and the threat that a drastic shift away from the floor system would pose to the euro itself. The floor system made clear the underlying fragmentation of the European money market, which had simply been masked by ECB actions since the Great Crisis. This is shown in the following section.

5. The fragmentation of the European money market(s)

Money market fragmentation is acknowledged in the literature, and the focus of attention tends to be divergences in interest rates.[35] The typical indicators deployed for the purpose, especially during the Great Crisis, were widening yield spreads and rising EURIBOR-OIS spread. The point

[34]L Brandao-Marques and L Ratnovski, 'The ECB's Future Monetary Policy Operational Framework: Corridor or Floor?' (2024) IMF Working Paper WP/24/56, available at: <https://www.imf.org/en/Publications/WP/Issues/2024/03/15/The-ECBs-Future-Monetary-Policy-Operational-Framework-Corridor-or-Floor-546355>.

[35]M Abascal, T Alonso and S Mayordomo, 'Fragmentation in European Financial Markets: Measures, Determinants, and Policy Solutions' (2013) BBVA Working Paper 12/22, available at: <https://www.bbvaresearch.com/wp-content/uploads/migrados/WP_1322_tcm348-394976.pdf>; Eisenschmidt et al (n 25); S Claessens, 'Fragmentation in Global Financial Markets: Good or Bad for Financial Stability?' (2019) BIS Working Papers 815, available at: <https://www.bis.org/publ/work815.htm>;

is, however, that the fragmentation of the European money market is more deeply rooted than appears at first sight by considering mere price phenomena (ie, spreads). The market is inherently fragmented because the architecture of the euro is itself fragmented.

Even during the early stages of the EMU, money markets were described as having integrated at different speeds, with segments such as the repo markets proceeding at much slower pace.[36] Things have become even more complicated since the early 2000s, as repo markets have acquired increasing importance in financialised core countries. The reason is partly the move towards market-based approaches to collateral management, but more strongly the entanglement of commercial and non-commercial (shadow) banks inducing a broader shift toward short-term financing through money markets.[37]

There are both secured (interbank) and unsecured money markets in Europe. A prominent effect of the Great Crisis was the widespread adoption of collateralised transactions to secure bank funding. Repos have long been crucial to the implementation of Eurosystem policies but became the prevalent instrument in interbank markets during the interregnum.[38] Nonetheless, the repo markets remain fragmented in terms of the prices of distinct repo transactions, securities used by the national banking sectors, and the clearing and settling infrastructure.

Indeed, while repo markets proliferated in the EMU and banks became the primary participants, the use of repo markets by banks remained far from uniform. To be more specific, Euro-area banks use mainly foreign collateral in repo transactions, except for banks located in Italy and Spain.

Figure 4, which shows the origin of collateral used by different national banking systems in the EMU for 2018–20, indicates that there is a clear preference for domestic collateral by Italian and Spanish banks. These banks used domestic sovereign bonds for roughly 70–80 per cent of their lending transactions and roughly 60–70 per cent of their borrowing transactions in repo markets during the period. This is clear evidence of fragmentation, particularly as roughly 85 per cent of repo transactions involve the use of government securities as collateral (ECB 2021).

The fragmentation of collateral inevitably leads to asymmetric effects in pricing. Figure 5 shows repo rates by national jurisdictions for 2018–20, and highlights two crucial factors: first, the presence of multiple General Collateral baskets (one per sovereign issuer) and, second, the different rates per basket.

European markets contain two types of repos: General Collateral (GC) and Specific or Special Collateral (SC), and the difference lies in the collateral posted for each. Summarily put, the former allows for the use of any security within a predetermined basket as collateral, while the latter allows for only a specific security. GC thus offers to repo sellers a degree of substitution among the securities in the basket, whereas SC specifies the security to be used. Consequently, GC repos are typically used to obtain liquidity, while SC repos are primarily security-driven, that is, they enable the buyer to obtain a specific security that may be needed for other purposes – usually to hedge or to cover a short-term position.

Since the Great Crisis, GC repos have become fragmented according to the jurisdiction of the issuers of the collateral selected for a basket. Prior to the Crisis, Central Counterparty Clearing Houses (CCPs), the institutions that are integral to repo clearing and settlement in European markets, broadly followed the ECB's General Collateral Framework and thus formed GC repo baskets by including securities from different national issuers. During and

Financial Stability Board, 'FSB Report on Market Fragmentation', 2019, available at: <https://www.fsb.org/2019/06/fsb-report-on-market-fragmentation-2/>.

[36]G Galati and K Tsatsaronis, 'The Impact of the Euro on Europe's Financial Markets'. Financial Markets' 12 (2003) Institutions and Instruments 165–222.

[37]Lapavitsas and the EReNSEP Writing Collective (n 12).

[38]Murau et al (n 14).

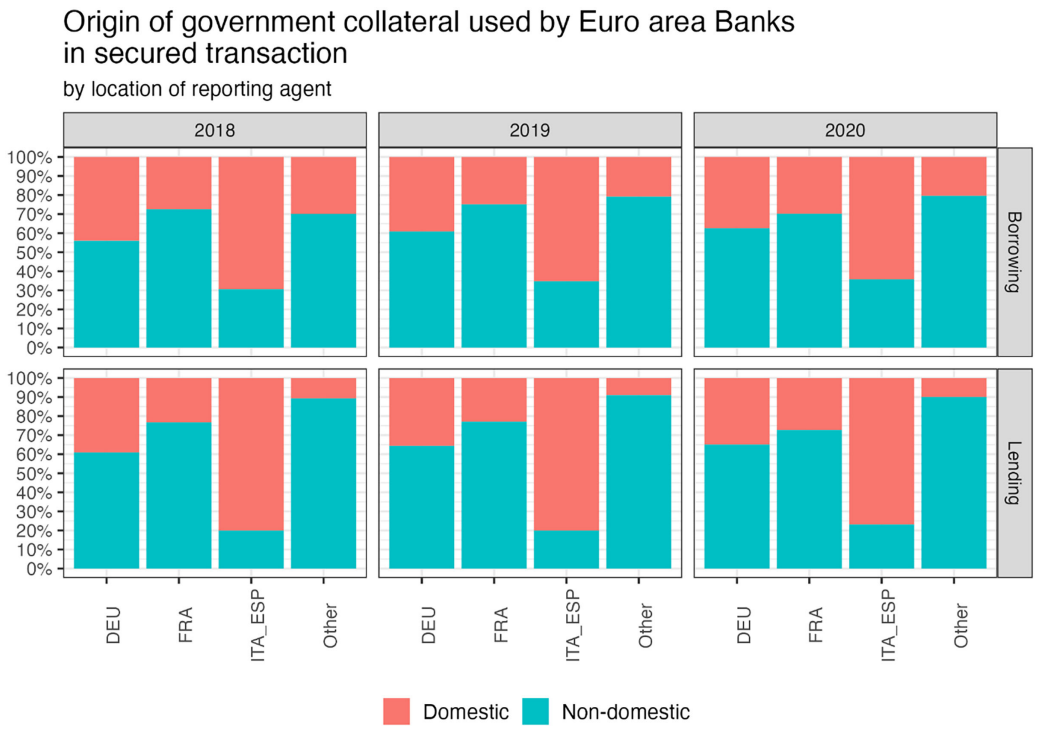


Figure 4. Origin of government collateral used by Euro area Banks in secured transactions (share of total), 2018, 2019, and 2020.
Source: Elaborations on ECB, SDW and the MMSR.

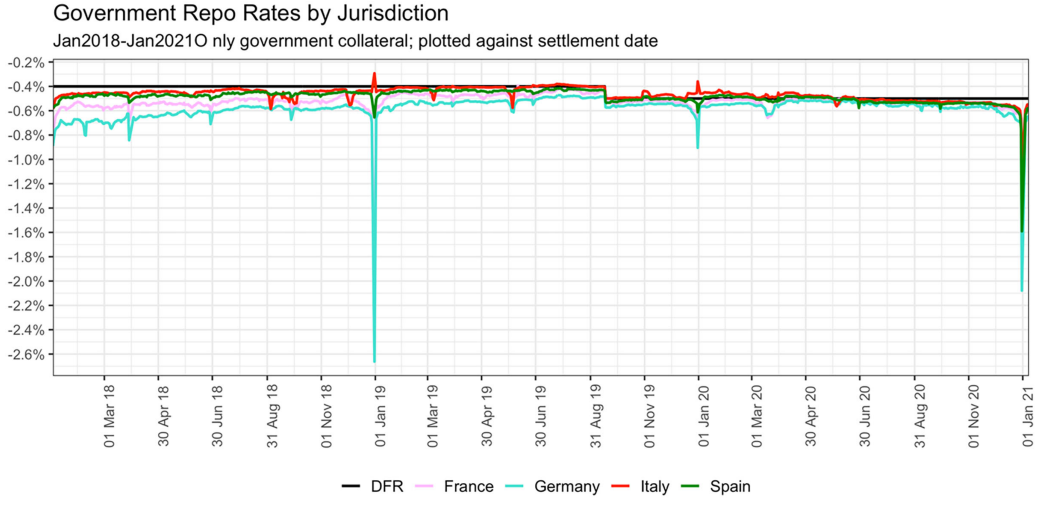


Figure 5. Government repo rates by jurisdiction, January 2018–January 2021.
Notes: Only government collateral; plotted against settlement date. The rate includes both borrowing and lending transactions. Source: Elaborations on ECB, SDW and the MMSR.

after the Crisis, collateral baskets began to fragment according to the nationality of the issuers of securities. The main reason was the credit risk attached to the national securities issued by each Member State.

GC repos became – and have remained – fragmented along national borders at the institutional level, baskets typically including debt securities (or other securities but with different rates and haircuts) issued by the same government. The implication is that repo rates have moved in fragmented ways, as is shown in Figure 5.

Figure 5 shows that between 2018 and 2021 only the Italian GC repo rate moved in a way that might have been expected in view of the role of repos in the credit system, that is, with positive spikes at quarter and especially at year-end. Spanish GC repo rates followed in a more subdued manner the movements of the French and German repos, indicating that there was a struggle for collateral at year-end. Clearly, Italian collateral was not sought in the same way, and experienced selling pressures in exchange for liquidity at key dates. Moreover, the negative spikes of German and French repo rates were not caused by overall scarcity of collateral but by the limited volume of German or French collateral available in the EMU markets.

Also crucial in this respect is that the market infrastructure behind repo markets has suffered from fragmentation. The creation of the Eurozone did not unify the clearing and settlement processes but merely brought some standardisation and interoperability, while maintaining the highly national dimensions of Central Counterparties and Central Securities Depositories.[39]

Thus, National Central Banks within the Eurosystem continued to have accounts with their national Central Securities Depositories for the delivery of local securities in monetary policy operations. For securities used as collateral outside of the borrower's National Central Bank jurisdiction, a system of correspondent central banks was put in place, rather than linking Central Securities Depositories directly. In short, a 'vertical' instead of a 'horizontal' form of integration was promoted among national jurisdictions, which minimises cross-border interactions.[40] In the EMU there is at least one Central Securities Depository per National Central Bank jurisdiction, while the USA has only two (Fedwire Securities Service and the Depository Trust Company) as does Japan (Japan Securities Depository Center and the Bank of Japan Financial Network System).

The fragmentation of the infrastructure resulted from the push for integration under the neoliberal logic of the Treaty of Maastricht. In the words of Padoa-Schioppa,[41] there were two crucial principles: the market and the decentralisation principle. The former made the Eurosystem a passive or neutral agent in the integration of market infrastructures. Market forces would presumably create appropriate infrastructural mechanisms in the Eurozone, and there was no need for a concerted push towards integration and a systematic restructuring of the European payment infrastructure. The latter allowed different national payment, clearing, and settlement procedures to maintain their national features with each National Central Bank involved only in its own national jurisdiction. The result was structural fragmentation of the money market(s) of Europe, including the repo market, as was shown in this section.

6. The impact of fragmentation

Against this background, it is easier to grasp the peculiar character of ECB actions after 2007–9. Summarily put, the central bank constantly struggled to maintain the transmission mechanism of monetary policy in the face of structural fragmentation. The ECB focused on the secure segment of the money market in which participants seek to access funding by using collateral comprising securities that are primarily sovereign bonds. This was a key factor in creating (and misallocating)

[39]Bank for International Settlements and Technical Committee of the International Organisation of Securities Commission, 'Principles for Financial Market Infrastructures', April 2012, available at: <https://www.bis.org/cpmi/publ/d101a.pdf>.

[40]Galati and Tsatsaronis (n 35).

[41]T Padoa-Schioppa, 'Payments and the Eurosystem', Sibos, Munich, 13 September 1999, available at: <https://www.ecb.europa.eu/press/key/date/1999/html/sp990913.en.html>.

excess liquidity since 2007–9 as well as changing ECB collateral policies and temporarily supplying market participants with securities in addition to liquidity.

Excess liquidity is the sum of all liquidity held by banks at the Central Bank above the required reserves, irrespective of whether that liquidity is held in the deposit facility or the reserve account. It arose following the shift in monetary policy toward, first, the provision of reserves on demand by banks and, second, massive asset purchases, as was discussed in Sections 2 and 4. Its emergence casts light on the ECB's efforts to counter the asymmetric allocation of bank reserves, which in turn reflects the fragmentation of collateral.

The immediate spur of the shift in ECB monetary policy in 2007–9 was the divergence in the spreads between member country sovereign bonds in view especially of the fact that ECB operations mostly require collateral. It took a long time for spreads to be compressed, however, as private banks remained wary of government bonds in undertaking repo transactions. Only after the massive expansion of asset purchases in 2014, and the creation of permanent excess liquidity, did spreads begin to stabilise.

Crucially, the further injection of liquidity by the ECB during the Pandemic Crisis of 2020–21 was allocated in ways that reflected the internal portfolio decisions by banks. In contrast to the 2010s, excess reserves accumulated also in Italy and Spain, but the majority ended up in German or French accounts.[42] These notable disparities were driven by two factors: first, the greater size and pivotal role of the German and the French banking systems in Europe and, second, by National Central Banks buying domestic government bonds and leaving the sellers with unused sums in their bank accounts. Germany gradually acquired a much more central role in the holding of reserves as public liquidity was provided freely to European banks.

To counter the fragmentation of excess reserves, the ECB introduced the 'Two-Tier System' in October 2019. The System was devised to create a bracket of exempted reserves from the Deposit Facility Rate, thus giving an incentive to commercial banks to re-allocate reserves among National Central Banks. However, it is clear from Figure 5 that banks proceeded to reallocate only a very small part of the excess funds in their Deposit Facilities. The reallocation effect was entirely dwarfed by the subsequent explosion of liquidity provision during the Pandemic Crisis, which reinforced the asymmetric distribution of excess reserves.

Moreover, the rise in interest rates in late 2022 reshaped the composition of excess liquidity. With the 'floor' system, banks did not accumulate excess reserves as deposits in their unremunerated Current Accounts at the ECB, but increased their holdings in the Deposit Facility until the rate on the deposits was lowered to zero in 2012. That is, excess liquidity began to increase in 2008, but excess reserves became considerable only after the appearance of very low (even negative) rates of interest together with vast securities purchases by the Eurosystem.

Since September 2022, excess reserves in the Current Accounts have collapsed to a negligible amount, as can be seen in Figure 5. However, the funds were simply transferred to the commercial banks' Deposit Facility, now paying a positive interest rate again. Figure 6 shows that the composition of excess liquidity has changed substantially as banks adapted to a positive interest rate environment, but without an overall reduction in its volume.

The fragmented nature of European money markets became still more apparent through the treatment of collateral by the ECB as market ratings of sovereign debt began to diverge following the outbreak of the Crisis. The Eurosystem Collateral Framework specified that the eligibility of collateral for emergency liquidity or refinancing operations would be based on the decisions of private rating agencies in the markets (Standard & Poor's Global Ratings, Moody's, and Fitch Ratings). Moreover, the ECB sought to harmonise and integrate the lists of eligible collateral securities by the individual National Central Banks. This would presumably provide a single and common treatment of collateral – dubbed the 'Single List of Eligible

[42]Baldo et al (n 28).

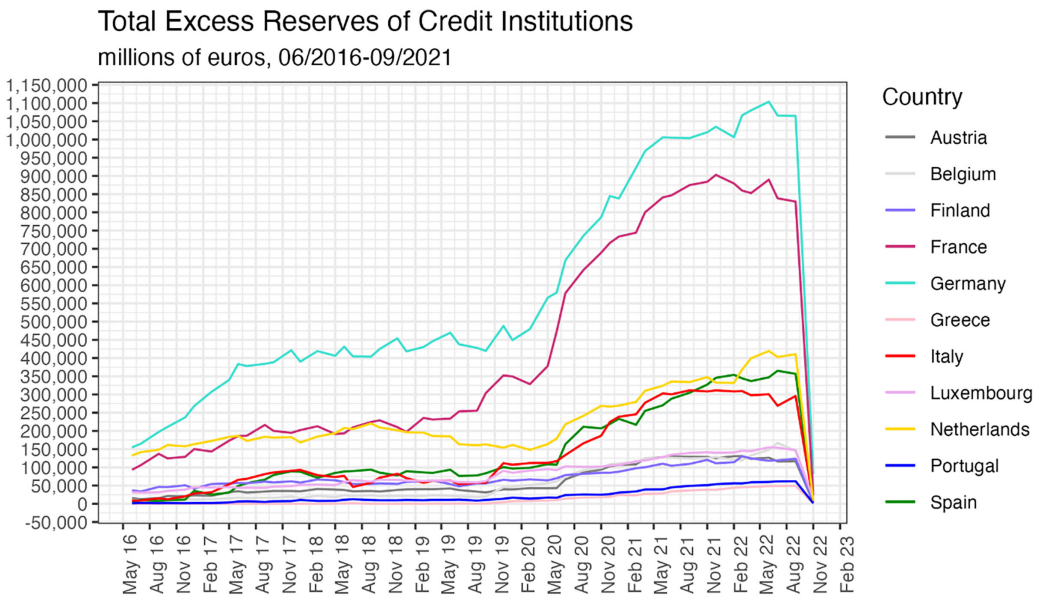


Figure 6. Total Excess Reserves of Credit Institutions by NCB (mn euros), June 2016–July 2022.
Notes: Credit Institutions are MFIs excluding Eurosystem not subject to minimum reserve requirements and Non-MFIs Source: Author's elaborations on SDW, ECB and MMSR.

Collateral' conditional on the credit ratings defined by the Eurosystem Credit Assessment Framework.[43]

In effect, the ECB accepted a wide array of private securities in repo operations. The aim was to protect – and augment – the elastic access to liquidity for commercial banks via repo operations with their jurisdictional central bank.[44] At the root of the policy, however, lay the inability of the ECB to assess and predict the workings of the European money markets in terms of both quantities and prices.[45] Thus, the availability of broad collateral would allow National Central Banks to remedy the fragmented functioning of money markets and the persistently national character of banking systems within the Eurozone.

The broader collateral framework in practice reflected the acceptance of the fragmented nature of the European money market by the ECB and its admission that fragmentation could not be countered but only covered. The efficiency of a collateral framework is determined by its ability to offset the typically pro-cyclical character of collateralised lending.[46] Namely, contractions in credit provision during periods of financial turbulence are usually accompanied by fewer securities eligible for collateral and thus lead to a further contraction in credit provision.

By broadening the list of eligible securities but differentiating the 'haircuts' of government securities according to the country that issued them, the ECB de facto accepted the fragmentation of repo baskets. It exacerbated the pro-cyclical character of lending by encouraging Central Counterparties to follow the different valuations of sovereign collateral

[43]F González, Fernando and P Molitor, 'Risk Mitigation Measures and Credit Risk Assessment in Central Bank Policy Operations'. In E Tabakis, F González and U Bindseil (eds), *Risk Management for Central Banks and Other Public Investors* (Cambridge University Press 2009), 303.

[44]Murau et al (n 14).

[45]U Bindseil, M Corsi, B Sahel and A Visser, 'The Eurosystem Collateral Framework Explained' (2017) ECB Occasional Paper Series 189, available at: <https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op189.en.pdf>.

[46]A Tobias and HS Shin, 'Liquidity and Leverage' (2009) Federal Reserve Bank of New York Staff Report 328, available at: <https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr328.pdf>.

according to the issuer.[47] It also indirectly fuelled the concentration of selected sovereign bonds on bank balance sheets.[48] In practice the ECB reinforced the fragmentation of the money market and the divergence of spreads, particularly as the various rounds of broadening collateral eligibility took place as delayed reactions to market fluctuations.

Finally, the fragmented nature of the European money market and its intractability also became apparent through the potential shortages of collateral as the ECB absorbed securities via repo agreements or outright asset purchases. To counter this potential shortage, the ECB established a Securities Lending Programme. The implementation of these programmes has been undertaken in a decentralised way, and the outcome was merely to palliate the asymmetric liquidity flows across jurisdictions.

The fragmentation of the market in practice privileged some sovereign bonds as collateral, above all, German bonds. The result was asymmetric liquidity flows among banks toward the German jurisdiction. The Securities Lending Programme has ameliorated the problem, particularly after the outbreak of the Pandemic Crisis, by injecting back into the secondary markets part of the securities purchased by the ECB and National Central Banks. Nonetheless, the lending has taken place via a few selected institutions. Suffice it to note that the ECB has been operating primarily through the German jurisdiction and relying heavily on Deutsche Bank AG for the management of its portfolio.

7. Conclusion

The ECB has been deeply transformed since the Great Crisis of 2007–9, not least by its balance sheet growing enormously in size. Transformation on the asset side has involved acquiring public and private securities as well as refinancing loans to commercial banks. The counterpart on the liability side was a tremendous expansion of public fiat money as both bank reserves and banknotes.

The transformation reflected a profound shift in the framework of monetary policy – and the determination of short-term interest rates – away from the corridor and toward the floor system. In effect, the ECB engulfed the European money market, ensured abundant provision of liquidity to commercial banks, and for much of the period drove interest rates close to zero.

Similarly to other core central banks, the policy of the ECB resulted in heavy dependence of commercial banks on easily available publicly generated liquidity, a phenomenon that is highly unusual for normally functioning money markets. The implications began to appear after 2022 as inflation accelerated and led core central banks to raise interest rates, while contracting their balance sheets. The ECB engaged in contraction by reducing refinancing loans, while retaining enormous holdings of securities. At the same time, it continued to guarantee the provision of 'ample' liquidity to commercial banks by using repos. Consequently, the floor system became untenable but at the same time the monetary framework of monetary policy reached an impasse.

This pattern of operations does not bespeak a new 'interventionist' stance on the part of the ECB. Rather, it reflects ad hoc interventions in the money market to confront pressures emerging during and after 2007–9 which, however, assumed a peculiar character in Europe. The reason is that, unlike other core countries, the money market of the EMU is structurally fragmented, often along national lines. Money market fragmentation is a constant threat to the existence of the euro. Consequently, ECB interventions are heavily concerned with covering the cracks and ensuring the survival of the euro.

The fragmentation of the European money market is visible in the functioning of the repo section of the money market, particularly as excess liquidity held by banks was misallocated in

[47]KG Nyborg, *Collateral Frameworks: The Open Secret of Central Banks* (Cambridge University Press 2016).

[48]K Whelan, Karl, 'The ECB's Collateral Policy and Its Future as Lender of Last Resort' (2014) Part of the compilation XXX for the Monetary Dialogue IP/A/ECON/NT/XXX. European Parliament, available at: <https://www.karlwhelan.com/EU-Dialogue/Whelan-November-2014.pdf>.

favour of German and French banks. Furthermore, the ECB has engaged in a Securities Lending Programme to tackle the malfunctioning of the repo market. However, the treatment of collateral in repo transactions by the ECB in practice accepted the fragmentation of money markets and even exacerbated it.

In sum, ECB interventions reflected in large part its efforts to palliate the fragmentation of the money market. While the underlying reality of fragmentation persists, the conduct of the ECB will be driven by the need to protect the euro. This concern also marks the current quandary in shaping its monetary policy.

Acknowledgements. Thanks are due to Nicolás Aguila and Dimitris Argyroulis for helpful comments. All errors are the authors' responsibility. This publication is the result of a conference funded by the European Union – Next Generation EU, Mission 4 Component 2, CUP E53D23006970006, within the framework of the PRIN 2022 call, project 'ROOSEVELT IN BRUSSELS. A revival of activist government in post-pandemic Europe?' (2022X3ZFXF).

Competing interests. None.

Cite this article: C Lapavitsas and M Giordano, 'ECB monetary policy in a quandary' (2026) *European Law Open* **5**, 560–579. https://doi.org/10.1017/elo.2025.10043